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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/494,945	02/01/2000	Tadahiro Ohmi	862.C1811	4149

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EXAMINER	
FLORES RUIZ, DELMA R	
ART UNIT	**PAPER NUMBER**
2828	

DATE MAILED: 09/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

MC

Office Action Summary	Applicati n No. 09/494,945	Applicant(s) OHMI ET AL.	
	Examiner Delma R. Flores Ruiz	Art Unit 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 24 July 2003.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 4-31,34,39-55,57-66 and 109-112 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 4-31,34,39-55,57-66 and 109-112 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Paul Ip
PAUL IP
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 4 – 11, 14 – 25, 27 – 53, 57 – 60, 63 – 66 and 109 – 112 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohmi et al (6,331,994).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claim 4, Ohmi et al discloses a laser oscillating apparatus for generating a laser beam comprising: a laser tube (Fig. 8A, Character 2) which is filled with laser gas; and a waveguide which has a plurality of slots (Figs. 9A, 9B, and 9C, Column 12, lines 22 – 30) formed in a waveguide wall, to emit electromagnetic waves (Column 12, lines 22 – 30) and an electromagnetic waves passage for connecting said plurality of slots and said laser tube (Fig. 8A, Character 2) between said laser tube and said waveguide, and providing a predetermined distance between said wave guide and said laser tube, said predetermined distance being equal to or greater than the half-wavelength of an electromagnetic wave introduced from said waveguide (Figs. 3A-C, 4A-B, 6A- C, 8A, 9A-C, 11A – 14,16A, 17A – 23A, Column 12, lines 1 – 30, Column 13, lines 30 – 35, 62 – 67, Column 14, lines 1 – 5, Column 19, lines 15 – 20, and Column 16, lines 5 – 13, 19 – 23).

Regarding claims 5, 6, 14, 40, and 65, Ohmi discloses the predetermined distance is an integral multiple of the half-wavelength of an electromagnetic wave introduced from said waveguide, an waveguide electromagnetic wave introduced from said waveguide and a waveguide is a microwave, the width of said wide portion is substantially equal to one of the wavelength and the half-wave length of an electromagnetic wave introduced from said waveguide (Figs 6A, 6B, Abstract, and Column 12, lines 22 – 30).

Regarding claims 7, 8, 9, 12 – 13, and 17, Ohmi discloses a passage is made from a conductor, and at least a portion where said passage is in contact with said laser tube, said passage forms an air gap having an opening with a predetermined width over the length of said laser and air gap is filled with a dielectric member, only a distal end portion of said air gap is narrowed, and the opening of said air gap has the shape of a slit over the length of said laser tube and air gap has wide portion wider than the other portion in the vicinities of distal end portions and the waveguide if filled with a dielectric member (Column 13, lines 47 – 61, and Column 17, lines 23 – 30).

Regarding claim 10, and 11 Ohmi discloses a dielectric member is comprises of a plurality of member having different dielectric constants and the width of said air gap is an integral multiple of the half-wave length of an electromagnetic wave introduced from said waveguide (Figs. 5, 6A and 6B, Column 12, lines 22 – 30, Column 13, lines 1 – 4).

Regarding claim 15 Ohmi discloses a width of said wide portion changes along a longitudinal direction of said air gap on the basis of an intensity distribution of electromagnetic waves emitted from said slot (Column 13, lines 30 – 35).

Regarding claims 16, Ohmi discloses a dielectric lenses each having a curved shape corresponding to said slot are formed in said passage in at least a portion above said plurality of slot (Figs 9A-C, 16A).

Regarding claims 18, 21, 24, 30, 34, 36, 41, 49, 52, 57, 66, and 112 Ohmi discloses a laser gas id one of at least one inert gas selected from the group consisting of Kr, Ar, He and Ne and a gas mixture of said inert gas and F_2 gas (Abstract, Column 1, lines 21 – 27 and Column 3, lines 17 – 24).

Regarding claim 19, Ohmi dislcoses a laser oscillating apparatus for generating a laser beam comprising; a laser tube (see Fig. 8A Character 2) which is filled with a laser gas; and a waveguide which has a plurality of slots (see Figs 9A-C, Column 12, Lines 22 – 30) formed in a waveguide wall and introduces electromagnetic waves into said laser tube thought said slots, wherein the width of longitudinal end portions of said slot is made larger that the width of a central portion thereof (Figs 6A, 6B. 8A, 11A 12 A, Column 12, lines 1 – 6, Column 13, lines 30 – 35).

Regarding claim 20, and 28 Ohmi discloses an end portions have circular shapes with a diameter larger than the width of said central portion and air gap structure in a central portion of said slot is mode smaller than an air gap portion near end portions of said slot (Figs. 2, 11B).

Regarding claim 22, Ohmi discloses a laser oscillating apparatus for generating a laser beam comprising; a laser tube (see Fig. 8A Character 2) which is filled with a laser gas; and a waveguide which has a plurality of slots (see Figs 9A-C, Column 12, Lines 22 – 30) formed in a waveguide wall and introduces electromagnetic waves into said laser tube thought said slots, wherein said slots are formed apart from a central axis along a longitudinal direction of said waveguide and each of said slots is curved such that end portions are closer to the central axis than a central portion (Figs 6A, 6B. 8A,11A 12 A, Column 12, lines 1 – 6, Column 13, lines 30 – 35).

Regarding claim 23, Ohmi discloses a electromagnetic waves (Column 12, Lines 22 – 30) are radiated from said waveguide n the direction of a long end face of said waveguide (Figs 6A, 6B. 8A,11A 12 A, Column 12, lines 1 – 6, Column 13, lines 30 – 35).

Regarding claim 25, Ohmi discloses a laser oscillating apparatus for generating a laser beam comprising; a laser tube (see Fig. 8A Character 2) is filled with a laser gas; and a waveguide which has a plurality of slots (see Figs. 9A-C, Column 12, Lines 22 – 30) formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slot, wherein an air-gap structure is formed in said waveguide wall in which said slots are formed (Figs. 5, 6A and 6B, Column 12, lines 22 – 30, Column 13, lines 1 – 4).

Regarding claims 26 – 27, and 29 Ohmi discloses the air gap structure includes an air gap portion formed near end portions of said slots within a range from said end portions to a distance of $\lambda g/4$ (λg is the waveguide of said electromagnetic wave) and air gap structure is formed with a width equal to an integral multiple of $\lambda g/2$ (λg is the waveguide of said electromagnetic wave) and in a direction perpendicular to a longitudinal direction of said slots, air gap structure is formed with a width equal to an integral multiple of $\lambda g/2$ (λg is the waveguide of said electromagnetic wave) (Figs. 6A, and 6B, Column 12, lines 1 – 6).

Regarding claim 31, Ohmi discloses a laser oscillating apparatus for generating a laser beam comprising; a laser tube (see Fig. 8A Character 2) which is filled with a laser gas; and a waveguide which has a plurality of slots (see Figs 9A-C, Column 12, Lines 22 – 30) formed in a waveguide wall and introduces electromagnetic waves into said laser tube thought said slots, wherein each of said plurality slots has a tapered shape whose sectional shape narrows toward said laser tube (Figs. 9A, 9B, and 9C, Column 12, lines 22 – 30).

Regarding claim 35, Ohmi discloses a laser oscillating apparatus for generating a laser beam comprising; a laser tube (see Fig. 8A Character 2) which is filled with a laser gas; and a waveguide which has a plurality of slots (see Figs 9A-C, Column 12, Lines 22 – 30) formed in a waveguide wall and introduces electromagnetic waves into

said laser tube thought said slots, formed such that width of end portions in a longitudinal direction of each of said slot is made smaller that the width of a central portion thereof (Figs 6A, 6B. 8A,11A 12 A, Column 12, lines 1 – 6, Column 13, lines 30 – 35).

Regarding claim 37, Ohmi discloses a laser oscillating apparatus for generating a laser beam comprising; a laser tube (see Fig. 8A Character 2) which is filled with a laser gas; and a waveguide which has a plurality of slots (see Figs 9A-C, Column 12, Lines 22 – 30) formed in a waveguide wall and introduces electromagnetic waves into said laser tube thought said slots, wherein an electromagnetic wave is waveguide forms a standing wave and each of said slots is formed so as to make the center of slot substantially coincident with anode of the standing wave (Figs 6A, 6B. 8A,11A 12 A, Column 12, lines 1 – 6, Column 13, lines 30 – 35).

Regarding claim 39, Ohmi discloses a slot are formed in a line at a pitch equal to one of the wavelength or the half-wave length of an electromagnetic wave in said waveguide (Figs 6A, 6B. 8A, 11A 12 A, Column 12, lines 1 – 6, Column 13, lines 30 – 35, and Column 14, lines 23 – 42).

Regarding claims 42 and 43, Ohmi discloses a laser oscillating apparatus for generating a laser beam comprising; a laser tube (see Fig. 8A Character 2), which is

filled with a laser gas; and a waveguide which has a plurality of slots (see Figs 9A-C, Column 12, Lines 22 – 30) formed in a waveguide wall and introduces electromagnetic waves into said laser tube thought said slots, and shielding structure against said electromagnetic wave in said laser tube in order to prevent said plasma from diffusing and the shielding structure is formed to prevent diffusion of the electromagnetic wave in a direction perpendicular to a longitudinal direction of said slots (Figs 6A, 6B. 8A, 11A 12 A, Column 12, lines 1 – 6, Column 13, lines 30 – 35, and Column 14, lines 23 – 42).

Regarding claim 44, Ohmi discloses the shielding structure comprises a metal wall spaced apart from said slot by a predetermined distance (Figs 6A, 6B. 8A, 11A 12 A, Column 12, lines 1 – 6, Column 13, lines 30 – 35, and Column 14, lines 23 – 42).

Regarding claims 45 and 46, Ohmi discloses, the shielding structure is made from a mesh-like plate member, and shielding structure comprises a plurality of nozzle structure having predetermined opening (Figs 6A, 6B. 8A, 11A 12 A, Column 12, lines 1 – 6, Column 13, lines 30 – 35, and Column 14, lines 23 – 42).

Regarding claim 47, Ohmi discloses a nozzle is a passage of said laser gas (Figs 6A, 6B. 8A, 11A 12 A, Column 12, lines 1 – 6, Column 13, lines 30 – 35, and Column 14, lines 23 – 42).

Regarding claim 48, Ohmi discloses the shielding structure is formed by a magnetic field (Figs 6A, 6B. 8A, 11A 12 A, Column 12, lines 1 – 6, Column 13, lines 30 – 35, and Column 14, lines 23 – 42).

Regarding claims 50 and 51, Ohmi discloses a laser oscillating apparatus for generating a laser beam comprising; a laser tube (see Fig. 8A Character 2) which is filled with a laser gas; and a waveguide which has a plurality of slots (see Figs 9A-C, Column 12, Lines 22 – 30) formed in a waveguide wall and introduces electromagnetic waves into said laser tube thought said slots, wherein width in a short-side direction of said slot is made smaller that the thickness of a sheath serving as a passage of the electromagnetic wave extending from an opening of said slot in said short-side direction, and the width in said short-side direction in 10 – 100 μm (Column 2, lines 56 – 62, Column 12, lines 22 - 30).

Regarding claim 53, Ohmi discloses a laser oscillating apparatus for generating a laser beam comprising; a laser tube (see Fig. 8A Character 2) which is filled with a laser gas; and a waveguide which has a plurality of slots (see Figs 9A-C, Column 12, Lines 22 – 30) formed in a waveguide wall and introduces electromagnetic waves into said laser tube thought said slots, wherein a plurality of slots are arranged in the short-side direction of the waveguide to form a row of slot, and a plurality of the rows are disposed in the long-side direction of the waveguide ((Figs. 3A-C, 4A-B, 6A- C, 8A, 9A-

C, 11A – 14,16A, 17A – 23A, Column 12, lines 1 – 30, Column 13, lines 30 – 35, 62 – 67, Column 14, lines 1 – 5, Column 19, lines 15 – 20, and Column 16, lines 5 – 13, 19 – 23).

Regarding claim 55, Ohmi discloses a shield structure for suppressing diffusion of plasma is formed inside said laser tube (Figs. 3A-C, 4A-B, 6A- C, 8A, 9A-C, 11A – 14,16A, 17A – 23A, Column 12, lines 1 – 30, Column 13, lines 30 – 35, 62 – 67, Column 14, lines 1 – 5, Column 19, lines 15 – 20, and Column 16, lines 5 – 13, 19 – 23).

Regarding claim 58, Ohmi discloses a laser oscillating apparatus for generating a laser beam comprising; a laser tube (see Fig. 8A Character 2) which is filled with a laser gas; and a waveguide which has a plurality of slots (see Figs 9A-C, Column 12, Lines 22 – 30) formed in a waveguide wall and introduces electromagnetic waves into said laser tube thought said slots, wherein sad pair of waveguide sandwich said laser tube and are constructed such tat intensity distribution of electronic waves introduced therefrom are shifted from each other ((Figs. 3A-C, 4A-B, 6A- C, 8A, 9A-C, 11A – 14,16A, 17A – 23A, Column 12, lines 1 – 30, Column 13, lines 30 – 35, 62 – 67, Column 14, lines 1 – 5, Column 19, lines 15 – 20, and Column 16, lines 5 – 13, 19 – 23).

Regarding claim 59, Ohmi discloses a surfaces having slots are short end faces of said waveguides, and said slots are formed in a line at equal intervals in a longitudinal direction of said slots (Figs. 3A-C, 4A-B, 6A- C, 8A, 9A-C, 11A – 14,16A, 17A – 23A, Column 12, lines 1 – 30, Column 13, lines 30 – 35, 62 – 67, Column 14, lines 1 – 5, Column 19, lines 15 – 20, and Column 16, lines 5 – 13, 19 – 23).

Regarding claim 60, Ohmi discloses a waveguide are arranged such that slots corresponding to each other between the opposing surface are shifted relative to each other by a predetermined distance (Figs. 3A-C, 4A-B, 6A- C, 8A, 9A-C, 11A – 14,16A, 17A – 23A, Column 12, lines 1 – 30, Column 13, lines 30 – 35, 62 – 67, Column 14, lines 1 – 5, Column 19, lines 15 – 20, and Column 16, lines 5 – 13, 19 – 23).

Regarding claims 61 and 62, Ohmi discloses a slots are formed at a pitch equal to half of a wavelength in said waveguides, and the predetermined distance is ¼ and ½ of the wavelength (Figs. 3A-C, 4A-B, 6A- C, 8A, 9A-C, 11A – 14,16A, 17A – 23A, Column 12, lines 1 – 30, Column 13, lines 30 – 35, 62 – 67, Column 14, lines 1 – 5, Column 19, lines 15 – 20, and Column 16, lines 5 – 13, 19 – 23).

Regarding claims 63 and 64, Ohmi discloses a phase adjusting means for shifting phases of electromagnetic wave supplied into said waveguides relative to each other and the waveguide comprises tuning means for tuning an electromagnetic wave

(Figs. 3A-C, 4A-B, 6A- C, 8A, 9A-C, 11A – 14,16A, 17A – 23A, Column 12, lines 1 – 30, Column 13, lines 30 – 35, 62 – 67, Column 14, lines 1 – 5, Column 19, lines 15 – 20, and Column 16, lines 5 – 13, 19 – 23).

Regarding claim 109 and 110, Ohmi discloses, the width of said slots in end rows is smaller than the width of said slots near the center and the length of said slots in end rows is smaller than the length of said slots near the center (Figs. 3A-C, 4A-B, 6A-C, 8A, 9A-C, 11A – 14,16A, 17A – 23A, Column 12, lines 1 – 30, Column 13, lines 30 – 35, 62 – 67, Column 14, lines 1 – 5, Column 19, lines 15 – 20, and Column 16, lines 5 – 13, 19 – 23).

Regarding claim 111, Ohmi discloses a laser oscillating apparatus for generating a laser beam comprising; a laser tube (see Fig. 8A Character 2) which is filled with a laser gas; and a waveguide which has a plurality of slots (see Figs 9A-C, Column 12, Lines 22 – 30) formed in a waveguide wall and introduces electromagnetic waves into said laser tube thought said slots, wherein a dielectric lens (see Fig. 26, Character A2, A4 and A5) is attached to each of said plurality of slots for concertinaing a microwave (Figs. 3A-C, 4A-B, 6A- C, 8A, 9A-C, 11A – 14,16A, 17A – 26, Column 12, lines 1 – 30, Column 13, lines 30 – 35, 62 – 67, Column 14, lines 1 – 5, Column 19, lines 15 – 20, and Column 16, lines 5 – 13, 19 – 23).

Response to Arguments

Applicant's arguments filed 7/24/2003 have been fully considered but they are not persuasive. Applicant argues the prior art lacks: In claim 4, said a electromagnetic waves passage for connecting said plurality of slots and said laser tube between said laser tube and said waveguide, and providing a predetermined distance between said wave guide and said laser tube, said predetermined distance being equal to or greater than the half-wavelength of an electromagnetic wave introduced from said waveguide. The examiner disagree with the applicant arguments since the prior art does teach electromagnetic waves passage for connecting said plurality of slots and said laser tube between said laser tube and said waveguide, and providing a predetermined distance between said wave guide and said laser tube, said predetermined distance being equal to or greater than the half-wavelength of an electromagnetic wave introduced from said waveguide. (see Figs. 5 – 6B) as stated in the rejection above.

Applicant argues the prior art lacks: In claim 19, said the width of longitudinal end portions of said slot is made larger that the width of a central portion thereof. The examiner disagree with the applicant arguments since the prior art does teach the width of longitudinal end portions of said slot is made larger that the width of a central portion thereof (Figs 6A, 6B. 8A, 11A 12 A, Column 12, lines 1 – 6, Column 13, lines 30 – 35) as stated in the rejection above.

Applicant argues the prior art lacks: In claim 22, said slots are formed apart from a central axis along a longitudinal direction of said waveguide and each of said slots is curved such that end portions are closer to the central axis than a central portion. The examiner disagree with the applicant arguments since the prior art does teach said slots are formed apart from a central axis along a longitudinal direction of said waveguide and each of said slots is curved such that end portions are closer to the central axis than a central portion (Figs 6A, 6B. 8A, 11A 12 A, Column 12, lines 1 – 6, Column 13, lines 30 – 35) as stated in the rejection above.

Applicant argues the prior art lacks: In claim 25, said wherein an air-gap structure is formed in said waveguide wall in which said slots are formed. The examiner disagree with the applicant arguments since the prior art does teach wherein an air-gap structure is formed in said waveguide wall in which said slots are formed (Figs. 5, 6A and 6B, Column 12, lines 22 – 30, Column 13, lines 1 – 4) as stated in the rejection above.

Applicant argues the prior art lacks: In claim 31, said plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube thought said slots, formed such that width of end portions in a longitudinal direction of each of said slot is made smaller that the width of a central portion thereof. The examiner disagree with the applicant arguments since the prior art does teach plurality of slots

(see Figs 9A-C, Column 12, Lines 22 – 30) formed in a waveguide wall and introduces electromagnetic waves into said laser tube thought said slots, formed such that width of end portions in a longitudinal direction of each of said slot is made smaller that the width of a central portion thereof (Figs 6A, 6B. 8A,11A 12 A, Column 12, lines 1 – 6, Column 13, lines 30 – 35) as stated in the rejection above.

Applicant argues the prior art lacks: In claim 35, said, wherein each of said plurality slots has a tapered shape whose sectional shape narrows toward said laser tube. The examiner disagree with the applicant arguments since the prior art does teach wherein each of said plurality slots has a tapered shape whose sectional shape narrows toward said laser tube (Figs. 9A, 9B, and 9C, Column 12, lines 22 – 30) as stated in the rejection above.

Applicant argues the prior art lacks: In claim 37, said wherein an electromagnetic wave is waveguide forms a standing wave and each of said slots is formed so as to make the center of slot substantially coincident with anode of the standing wave. The examiner disagree with the applicant arguments since the prior art does teach wherein an electromagnetic wave is waveguide forms a standing wave and each of said slots is formed so as to make the center of slot substantially coincident with anode of the standing wave (Figs 6A, 6B. 8A,11A 12 A, Column 12, lines 1 – 6, Column 13, lines 30 – 35) as stated in the rejection above.

Applicant argues the prior art lacks: In claim 42 said, shielding structure against said electromagnetic wave in said laser tube in order to prevent said plasma from diffusing and the shielding structure is formed to prevent diffusion of the electromagnetic wave in a direction perpendicular to a longitudinal direction of said slots. The examiner disagree with the applicant arguments since the prior art does teach shielding structure against said electromagnetic wave in said laser tube in order to prevent said plasma from diffusing and the shielding structure is formed to prevent diffusion of the electromagnetic wave in a direction perpendicular to a longitudinal direction of said slots (Figs 6A, 6B. 8A, 11A 12 A, Column 12, lines 1 – 6, Column 13, lines 30 – 35, and Column 14, lines 23 – 42) as stated in the rejection above.

Applicant argues the prior art lacks: In claim 50 said, width in a short-side direction of said slot is made smaller that the thickness of a sheath serving as a passage of the electromagnetic wave extending from an opening of said slot in said short-side direction, (Column 2, lines 56 – 62, Column 12, lines 22 – 30). The examiner disagree with the applicant arguments since the prior art does teach width in a short-side direction of said slot is made smaller that the thickness of a sheath serving as a passage of the electromagnetic wave extending from an opening of said slot in said short-side direction, (Column 2, lines 56 – 62, Column 12, lines 22 – 30) as stated in the rejection above.

Applicant argues the prior art lacks: In claim 53 said, a plurality of slots are arranged in the short-side direction of the waveguide to form a row of slot, and a plurality of the rows are disposed in the long-side direction of the waveguide. The examiner disagree with the applicant arguments since the prior art does teach a plurality of slots are arranged in the short-side direction of the waveguide to form a row of slot, and a plurality of the rows are disposed in the long-side direction of the waveguide (Figs. 3A-C, 4A-B, 6A- C, 8A, 9A- C, 11A – 14,16A, 17A – 23A, Column 12, lines 1 – 30, Column 13, lines 30 – 35, 62 – 67, Column 14, lines 1 – 5, Column 19, lines 15 – 20, and Column 16, lines 5 – 13, 19 – 23) as stated in the rejection above.

Applicant argues the prior art lacks: In claim 58, said wherein sad pair of waveguide sandwich said laser tube and are constructed such tat intensity distribution of electronic waves introduced therefrom are shifted from each other. The examiner disagree with the applicant arguments since the prior art does teach wherein sad pair of waveguide sandwich said laser tube and are constructed such tat intensity distribution of electronic waves introduced therefrom are shifted from each other ((Figs. 3A-C, 4A-B, 6A- C, 8A, 9A-C, 11A – 14,16A, 17A – 23A, Column 12, lines 1 – 30, Column 13, lines 30 – 35, 62 – 67, Column 14, lines 1 – 5, Column 19, lines 15 – 20, and Column 16, lines 5 – 13, 19 – 23) as stated in the rejection above.

Applicant's arguments with respect to claims 111 and 112 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (703) 308-6238. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.

Paul Ip

Delma R. Flores Ruiz
Examiner
Art Unit 2828

Paul Ip
Supervisor Patent Examiner
Art Unit 2828

DRFR/PI